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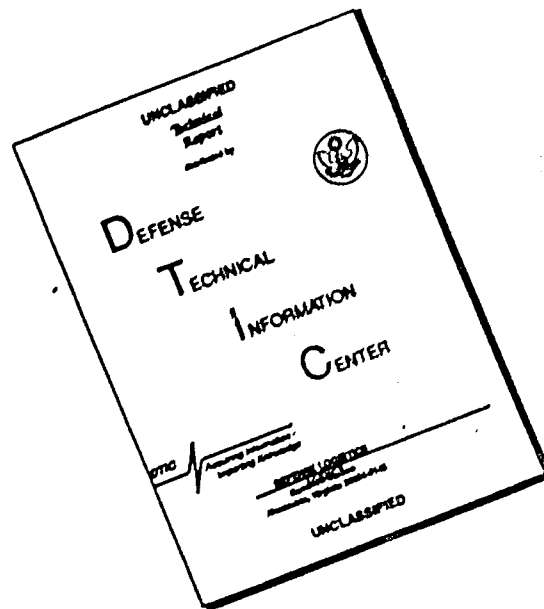
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DEPARTMENT OF THE ARMY

OFFICE OF THE ADJUTANT GENERAL

WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M) (24 Feb 69)

FOR OT UT 684163

5 March 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 588th Engineer Battalion, Period Ending 31 October 1968

AD849236

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1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.
2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

*Kenneth G. Wickham*

KENNETH G. WICKHAM  
Major General, USA  
The Adjutant General

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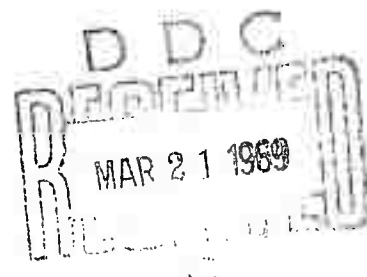
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DEPARTMENT OF THE ARMY  
HEADQUARTERS 588TH ENGINEER BATTALION  
APO San Francisco 96216

EBB-OPNS

10 November 1968

SUBJECT: Operational Report--Lessons Learned (RCS-CSFOR-65) for the Quarterly  
Period Ending 31 October 1968.

THRU: Commanding Officer  
79th Engineer Group (Const)  
APO San Francisco 96491

Commanding General  
20th Engineer Brigade  
ATTN: AVBL-OPN  
APO San Francisco 96491

Commanding General  
United States Army, Vietnam  
ATTN: AVHGC-DH  
APO San Francisco 96307

Commander-in-Chief  
United States Army, Pacific  
ATTN: GPOP-OT  
APO San Francisco 96588

TO: Assistant Chief of Staff for Force Development  
Department of the Army (ACSFOR-Di)  
Washington, D.C. 20310

Section I. Operations: Significant Activities

1. General:

- a. The 588th Engineer Battalion (Combat Army) was organized under

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TOE 5-35E until 1 October 1968, when it then became organized under TOE 5-35G. The battalion has a Headquarters and Headquarters Company and four combat line companies. The 362d Engineer Company (Light Equipment) is attached for all purposes and was organized under TOE 5-54D until 1 October 1968, when it then became organized under TOE 5-58G.

b. The battalion is organic to the 79th Engineer Group which is located at Long Binh, RVN. Operational support missions are assigned by the 20th Engineer Brigade.

c. Headquarters and Headquarters Company, Company A, Company B, Company D, and the 362d Engineer Company are located at Tay Ninh Base Camp, RVN (XT 143518). Company C is located at Dau Tieng Base Camp, RVN (XT 495475).

d. Through out the period the battalion has been engaged in combat support of the 25th Infantry Division, repair of lines of communication, construction of two major and one minor cantonment, construction of water well fill points, construction or rebuilding of artillery gun pads at three locations, rebuilding of a signal facility, construction of a MUST Hospital facility, construction of heliport facilities, providing logistical support for construction accomplished by other units, and operation of two laterite pits and a rock quarry. The battalion area of responsibility covers 6400 square miles of area and 110 miles of road network.

2. Command: The 588th Engineer Battalion was commanded by LTC Coleman C. Clement Jr. until 6 October 1968 when LTC John C. Levanger assumed command. SGM Ivan L. Compton served as Sergeant Major until 19 September 1968, when SGM Duke S. Peterson became Sergeant Major. Other personnel assignments were as follows:

<u>POSITION</u>	<u>NAME</u>	<u>PERIOD</u>
Bn XO	Maj Russell J. Kruchten	1 Aug--31 Oct
CO, HHC	1Lt Arthur R. Goodale 1Lt Stephen G. Wacker	1 Aug--22 Aug 23 Aug--31 Oct
CO, Co A	1Lt Martin H. Goedecke 1Lt John C. Hauck	1 Aug--21 Aug 23 Aug--31 Oct
CO, Co B	Cpt Billy L. Hilton	1 Aug--31 Oct
CO, Co C	Cpt Sammie D. Simmons	1 Aug--31 Oct
CO, Co D	1Lt Edward T. Maguire 1Lt Terrance L. Masters 1Lt Robert J. Depasqualle	1 Aug--3 Aug 4 Aug--25 Sep 26 Sep--31 Oct
CO, 362d Engr Co (LE)	1Lt John J. Hill	1 Aug--31 Oct

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Ending 31 October 1968.

### 3. Personnel, Administration, Morale and Discipline:

a. The battalion including the 362d Engineer Company had an overall strength of 79% during the quarter. Losses for November are 2 officers and 87 enlisted men; for December are 1 officer and 30 enlisted men; and for January are 2 officers and 80 enlisted men. Because of an enlisted rotational hump in February 1969, an infusion program involving 40 enlisted men was started this quarter. A rotational hump in March 1969 for officers is the basis for a similar infusion program involving three officers. During the quarter, 258 personnel rotated and 157 replacements were received. Replacements are brought to Tay Ninh from the 79th Engineer Group Headquarters by the battalion. Small groups of replacements may travel in the courier helicopter while larger groups are transported by convoy or fixed wing aircraft. Chronic shortages continue to exist in MOS 12A, 12B and 62E. During the quarter, the following awards were presented:

Legion of Merit	1
Air Medal	1
Bronze Star with "V" Device	3
Bronze Star	5
Army Commendation Medal	21
Purple Heart	22

b. This quarter the battalion finance section was moved from battalion headquarters in Tay Ninh to Cu Chi and consolidated with the 10th Finance Section. One finance clerk was left at Tay Ninh to process paper work on replacements and personnel with pay complaints.

c. A direct VHF "hot line" to the 79th Engineer Group permits land line communication. An FM radio net between the battalion and Group is also operational. A courier helicopter arrives daily from Long Binh with distribution, materials and spare parts. It is also used for command, control and for reconnaissance missions required by this battalion. In addition, it is used to deliver mail, pay and personnel to field locations.

d. The battalion operated a photo crafts shop for use by all off-duty personnel. Funds are obtained through Special Services. A nightly movie is shown in the battalion outdoor theater. Live floor shows are also available periodically. Unit newspapers are received from USARV, 25th Infantry Division and the 20th Engineer Brigade. The Pacific Stars and Stripes, the Army Times and Special Services magazines are also received. Each company operates an enlisted mens' club through the Sundry Fund. There is also one NCC and one Officer's Club in the battalion. The battalion makes full use of the R & R program. During the quarter 159 personnel went on R & R. Weekly religious services are held in the field and at permanent locations by the battalion Chaplain. The high morale of the battalion is indicated by the extensions of foreign service tours. Thirty two personnel extended their tours during the quarter to serve with the battalion and the 362d Engineer Company.

e. There were no General, 5 Special, and no Summary Courts-Martial during the quarter. Charges included assault, failure to obey a lawful order, and possession of marijuana. There were 11 Field Grade and 29 Company Grade Article 15's.

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### 4. Intelligence and Counterintelligence:

a. The 588th Engineer Battalion received daily intelligence summaries from the 1st Brigade, 25th Infantry Division, MACV units in Tay Ninh City, and from the Tay Ninh Province Chief's Office. Terrain studies, intelligence summaries, and spot reports are received from II Field Force.

b. Engineer reconnaissance of roads, bridges, culverts and airfields is performed regularly by the battalion intelligence section. Reconnaissance results are reported to the 79th Engineer Group, the 25th Infantry Division, Assistant Division Engineer and the 1st Brigade, 25th Infantry Division.

c. A daily "Dawn Patrol" reconnaissance of lines of communication is performed by the 25th Infantry Division at first light. The 588th Engineer Battalion monitors the dawn patrol frequency for reports of interdiction. Interdictions on lines of communication for which the battalion is responsible are repaired by the battalion as soon as infantry or armor security can be obtained. Spot reports concerning enemy action, road interdictions, or changes in unit locations are submitted to the 79th Engineer Group within two hours of occurrence.

d. Nui Ba Den mountain Signal Facility, which is being constructed by this unit, came under heavy enemy attack at 0130 hrs on 18 August 1968, resulting in several damaged buildings, 8 US KIA, 15 US WIA, and 15 VC KIA. There were no other enemy ground attacks conducted against the 588th Engineer Battalion elements during the reporting period. Engineer base camps and work sites did receive attacks by fire which were recorded as small arms fire, 358 rounds of 82 mm mortars, 5 rounds of 75 mm recoilless rifle, 261 rounds of 107 mm rockets and 7 rounds of 122 mm rockets, for a total of 641 rounds received during the quarter.

e. The battalion furnishes 45 men per night for perimeter security at Tay Ninh Base Camp, 51 men per night at Dau Tieng Base Camp and 6 men per night at the rock quarry site. During several periods of expected enemy activity during the quarter the same number of daytime guards were furnished at Tay Ninh and Dau Tieng Base Camps. The battalion has command control of the first reaction force at Tay Ninh Base Camp.

### 5. Plans, Operations and Training:

a. Operational Support Missions: Battalion effort on operational support missions varied from 29% to 60%. Missions were the following:

(1) OSMN 588-1: 2/32 Artillery Gun Pads. This project was transferred to OSMN 588-15 during this quarter.

(2) OSMN 588-8: The battalion has one platoon rebuilding a Signal Facility at a classified location.

(3) OSMN 588-10: Nui Ba Den Rock Quarry Mess Hall. This project was completed this quarter and the Project Completion Report is enclosed.

(4) OSMN 588-11: 2/32 Artillery Support; Fire Support Base St Barbara: This project provides for the reconstruction of four 175 mm gun pads,



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rehabilitation of existing living bunkers, and improving drainage facilities. Additional scope was added later to construct a 20' x 72' bunker mess hall and a radar tower. At the end of this quarter two gun pads were in the process of being rebuilt--one 25% complete and one 6% complete. The bunker mess hall is 70% complete and the rehabilitation of living bunkers is 30% complete. In addition to the operational support project, a classified combat support mission, to enlarge the facility, was completed during this quarter.

(5) OSMN 588-12: Bunker Construction Tay Ninh: This project provided for the construction of one five-man fighting bunker at the main gate of Tay Ninh Base Camp and was completed this quarter.

(6) OSMN 588-13: Artillery Gun Pad Stabilization at Dau Tieng. This project consists of stabilizing four 175 mm gun pads with rock and laterite. At the end of the quarter two gun pads were completed.

(7) OSMN 588-14: Bunker Construction, Dau Tieng. This Project provides for the construction of fifty perimeter bunkers. At the end of the quarter one bunker was completed and six were under construction.

(8) OSMN 588-15: 2/32 Artillery Gun Pads: This project provides for the construction of four 175 mm gun pads and superceded OSMN 588-1. At the end of the quarter three pads were completed. The four ammunition bunkers under OSMN 588-1 are completed.

(9) OSMN 588-16: Facilities Tay Ninh: This project provides for the construction of eight revetments for OV-10 aircraft. Construction will start next quarter.

(10) OSMN 588-17: Stabilization of Gun Pads FSB Buell: This project is in the planning stage and will provide for stabilizing four 155 mm gun pads.

(11) OSMN 588-18: Helicopter Rearm Point, Tay Ninh. This project is in the rebuilding and expansion phase of the existing facility. At end of the quarter a new road had been completed to the Rearm point.

(12) OSMN 588-19: Gun Pad Revetments, Dau Tieng: This project provides for the construction of a berm around four 175 mm gun pads. It was received at the end of this quarter and will be started next quarter.

(13) OSMN 588-20: Engineer Support, Dau Tieng: This project provides for the construction of a counter-mortar radar tower on Dau Tieng Base Camp. This project was received at the end of this quarter and will be started next quarter.

b. Lines of Communication Support. Amount of battalion effort expended on LOC's during this quarter varied between 18% and 34%. The following LOC's received battalion effort:

(1) Route TL 4: In repairs performed on Rt TL 4 from Tay Ninh to FSB St Barbara, 776 cy of 3" rock and 84 cy of laterite were placed to fill craters and soft spots in the roadway.

(2) Route LTL 13 and Route 243: From XT 258501 on Rt LTL 13 to XT 277514, 550 cy of 3" rock were used to repair pot holes, craters, and washed out areas. Two 36" x 36' culverts were placed at XT 277514 and two

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24" x 36' culverts were placed at XT 308542.

(3) Route QL 22: On Rt QL 22 from Tay Ninh south to Go Da Ha, XT 3625, 1120 cy of 3" rock and 154 cy of laterite were used in filling craters and soft spots. Placed one 36' x 44' culvert at XT 282337.

(4) Route LTL 26 and Route 239. These highways are the main supply routes from Tay Ninh to Dau Tieng, XT 4846. For general maintenance, filling pot holes and craters, culvert backfill and raising the road surface in low spots, 772 cy of 3" rock and 1030 cy of laterite were used. Placed two 36" x 48' culverts at XT 308488; one 48" x 48' at XT 348458; one 60" x 40' culvert at XT 337458; three 36" x 40' culverts at XT 338457; one 60" x 40' culvert at XT 415440 and two 60" x 35' culverts at XT 415443.

(5) Rock Quarry Road: Tay Ninh to the Nui Ba Den Rock Quarry at XT 2656 for repairs of pot holes and washed out areas. 160 cy of 3" rock and 38 cy of laterite were used. One timber trestle bridge was replaced by three 60" x 36' culverts at XT 238512.

(6) LOC Land Clearing Operations: This was initiated last quarter. The project consists of clearing 100 meters of rubber trees back on both sides of Rt. LTL 26 and Rt 239. The project was completed this quarter with a total of 560 acres cleared.

c. Base Construction: Battalion effort in this area varied between 12% and 27% during the quarter. Projects receiving battalion effort were the following:

(1) CD 66-171DC-79: 4002 Man Cantonment, Tay Ninh: This project provides for the construction of Tay Ninh Base Camp. Accomplished this quarter includes construction of three showers and four latrines, placement of concrete pads for two billets and the prefabrication of components for two billets. The project is 92% complete.

(2) CD 75-203-01-T-7S, Water Well and Fill Points, Tay Ninh: A total of five points are directed for Tay Ninh Base Camp. Points #1, 2 and 3 were completed during preceding quarters, and point #4 was completed this quarter. The Base Development Board is surveying the potable water requirements to determine whether point #5 is needed. Results are expected early next quarter. The project is 80% complete.

(3) CD 75-211-03-T-6S, Flight Control Tower, Tay Ninh: Under this directive a 44 foot high tower is under construction. By the end of the quarter the concrete footers had been placed and one ten foot section of the tower was constructed. This project is 20% complete.

(4) CD 75-212-01, Aviation Cantonment Facilities: This project provides for clubs, officer billets, shops and administrative buildings at Tay Ninh. Completed this quarter was one 1380 sq ft BOQ and one 960 sq ft Maintenance Shop and grease rack. This project is 65% complete.

(5) CD 75-205-03-6S, Aviation Support Facilities: Administrative and maintenance buildings are directed under this project. At the end of the quarter the Helicopter Maintenance Hangar was under construction. The project is 37% complete.

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(6) CD 66-212DC-79, MUST Hospital Facilities, Tay Ninh: Under this directive, a hospital facility with hardstands, service buildings and mess halls were constructed. During this quarter a water distribution system was begun and is 30% complete. This project is 92% complete.

(7) CD 75-216-01, MACV Province Advisors Facilities: Tay Ninh Province. Directed under this project are billets and sewage system for MACV advisors. During this period site preparation was completed and the installation of the septic tank for the sewage system was begun. The project is 10% complete.

(8) CD 75-215-01, MACV District Advisors Billets, Tay Ninh Province: This project provides for billets, sewage system, and water system for MACV advisors at four locations in Tay Ninh Province. Work has not started on this project as of the end of this quarter.

(9) CD 67-42-79, Tay Ninh Laterite Pit: The pit XT 1050 has been exhausted since the end of the last quarter. Explorations made at the end of the last period and the beginning of this period were negative. Laterite for projects at Tay Ninh is being extracted from a pit at the Nui Ba Den Rock Quarry.

(10) CD 66-16-79, Rock Quarry and Crusher Site, Nui Ba Den: The site has been in operation at XT 2656 since October 1966. During the quarter the quarry produced 12,824 cubic yards of 3" minus rock. The secondary crushers were moved to Cu Chi last quarter. To sustain concrete production at Tay Ninh and Dau Tieng, periodic hauls of 1½" minus rock have been made from Cu Chi to Tay Ninh. Rock produced at this quarry is used for base construction at Tay Ninh and Dau Tieng and is used for emergency repairs on all roads in the battalion AOR.

(11) CD 67-43-79, Laterite Pit, Dau Tieng: The pit located at XT 4948 has been in operation since June 1967 and is used for road and base camp construction at Dau Tieng and is also used for repairs of Route 239.

(12) CD 12-203-01-T-6S, 4500 Man Cantonment Dau Tieng: This directive provides for construction of the Dau Tieng Base Camp. During this quarter 7,840 sq ft of billets were constructed, 1125 cy of laterite were hauled for building hardstands and the base camp drainage system was improved.

(13) CD 12-229-01-T-79, Water Well and Fill Points, Dau Tieng: Four Water Well and Fill Points are directed by this project. Two are complete. The project is in a hold status at 50% completion pending a decision from the Base Development Board on the necessity of the two remaining wells.

d. Training: Each company conducts monthly training in personal, hygiene, character guidance, preventive maintenance, safety and weapons firing. Required yearly training is conducted at specified intervals according to each company's Master Training Plan. In addition to required training, night classes are scheduled periodically in engineering subjects for NCO's as a refresher and to prepare personnel desiring to advance to grades E-5 and E-6 for the promotion board. Special night classes for officers were scheduled during this period covering classes in preventive maintenance, enlisted promotion system, officer efficiency reports and communications. New Replacements attend the 25th Infantry Division's Replacement Training Center in Cu Chi, each month.

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5. Civic Affairs: During the period the battalion surgeon held MEDCAPS twice weekly at nearby villages. The Class 16 timber trestle bridge, begun last quarter, was completed by the local villagers with army supervision and was opened to traffic 16 October 1968. The Chaplain visited the local orphanages once each week and with battalion personnel, assisted in the repair and maintenance of the buildings.

### 6. Logistics:

a. All classes of supply including construction materials are requisitioned through the 228th Supply and Service Company at Tay Ninh. Bills of Materials for MCA and OM&A projects are approved by the 79th Engineer Group before issue.

b. Equipment and Supplies for the battalion which arrive at the 79th Engineer Group at Long Binh are picked up and transported to Tay Ninh by vehicles sent by the battalion. Construction materials are obtained from Long Binh in the same manner when a shortage exists at Tay Ninh. When additional haul capabilities are required, the 79th Engineer Group provides it from other units under its command.

c. Potable water on Tay Ninh base camp is obtained from four water wells and fill points constructed by the battalion. At Dau Tieng two water wells and fill points are completed.

### 7. Force Development: None

### 8. Command Management:

a. Projects and missions assigned to the battalion are supervised by the Battalion Commander under the staff supervision of the Operations Officer. The Intelligence and Operations sections operate together to plan and manage projects and missions. Equipment resources of organic and attached companies are allocated daily to insure efficient utilization.

b. Base construction policies are established by a base development planning board under the supervision of the Post Commander. This headquarters implements the policy within the framework of Military Construction Army and Operations and Maintenance Army Funded project directives. Management of projects in progress which are constructed on a self-help basis is further implemented by strict control of issued materials. All self-help construction is supervised by engineer personnel. When projects are assigned to the battalion's units, a meeting is held by the S-3 and the constructing unit commander to discuss the project. Before initiation of construction, a pre-construction conference is held by the battalion commander with the operations officer, constructing company commander and the platoon leader assigned to the project. This briefing is to discuss completely all aspects of the proposed construction and to permit comments to be made prior to the initiation of construction. After construction actually begins, the senior person present at the job site is prepared to brief visitors on construction progress.

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c. Daily operations meetings are held to discuss daily construction for the coming day. Management indicators used in committing effort and controlling progress include daily troop disposition reports, equipment deadline reports, weekly and monthly status of projects reports, project completion and after action reports.

### Section II. Commander's Observations, Evaluations, and Recommendations.

#### A. Personnel

##### 1. Consolidation of Finance Sections

a. Observation: Recently this unit's financial section was moved to Cu Chi to be consolidated with the central Finance Unit.

b. Evaluation: Payments to personnel in-processing necessitates air travel to Cu Chi (a distance of 30 kilometers). Man hours lost due to this separation are considered excessive.

c. Recommendation: When finance sections are consolidated it should be done on a local level to avoid this costly and time consuming travel process.

#### B. Operations:

##### 1. Destruction of Enemy Caves

a. Observation: It was found that placing the explosive charge on the floor of caves did not do a satisfactory job of destruction.

b. Evaluation: A better way of placing the explosives when destroying caves had to be found.

c. Recommendation: By molding a block of C4 plastic explosives to the roof of the cave and then detonating it a thorough destruction job was insured.

##### 2. Preserving Frozen Foods

a. Observation: Frequent power failures in the base camp created problems in keeping frozen foods properly refrigerated when an auxiliary power source was not available.

b. Evaluation: To save loss of frozen foods, an expedient freezer had to be devised.

c. Recommendation: During prolonged power failures frozen foods can be kept in a satisfactory condition up to 72 hours by immediately consolidating them in one insulated container or a 65 foot refrigerator and filling the upper racks with blocks of ice. The frozen food in the bottom of the refrigerator must be placed on wood dunnage and provisions must be made for protecting the food containers from being saturated with water dripping from the blocks of ice.

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### 3. Airlifting Lumber

a. Observation: Loads of lumber have a tendency to slip from their harness when lifting by CH 47's. This causes loads, when improperly slinged, to be dropped and also when they are not slung properly causes difficulty to the pilot in handling the helicopter.

b. Evaluation: Care must be taken in properly bundling, banding and slinging of lumber loads when airlifted.

c. Recommendation: Insure that the lumber is squared off and tightly banded using a steel strap banding machine. When slings are placed, set the sling on one end four feet shorter than the other. Loop the slings around each end and bring the running end of the sling to the center and join them with a clevis. Use a four foot sling for the hook-up. By slinging a load in this manner, the front of the bundle will ride four feet higher thus allowing for a smoother ride.

### 4. Laterite Substitute

a. Observation: During construction of a road to a temporary fire support base, an adequate source of laterite could not be found as a sub-layer and wearing surface.

b. Evaluation: A substitute for a sub-layer was needed because hauling enough laterite to the site would be costly and time consuming.

c. Recommendation: The soil in the area is composed of approximately 50% sand and 50% clay. It was found that using this soil for a temporary road was adequate if it was shaped, compacted and covered with an 8" to 12" layer of laterite for a wearing surface.

### 5. Field Laundry

a. Observation: While at a field location it was difficult to obtain helicopter sorties for taking soiled laundry into base camp to be laundered and returned to the men in the field.

b. Evaluation: Since the personnel were to be at the field location for an extended period of time an expedient laundry had to be set up.

c. Recommendation: By using a  $\frac{1}{4}$  ton trailer filled with water and lined with corrugated steel sheeting a very effective laundering apparatus was developed.

### 6. Vertical Clearances for Minefields

a. Observation: During a recent minefield operation a low-flying helicopter set off an M16 anti-personnel mine with tripwire injuring the door gunner and a passenger.

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b. Evaluation: Units whose camps have protective minefields should notify incoming aircraft of the obstacle.

c. Recommendation: A safe distance to overfly a minefield is not lower than 30 ft altitude.

### 7. Protective Clothing and Mine Clearing Operations

a. Observation: Injuries suffered from a M16 mine detonating can be considerably lessened if protective clothing is worn properly.

b. Evaluation: During a recent minefield clearing, a sensitive M16 mine detonated, injuring two personnel who were approximately the same distance from the mine. The individual wearing his protective clothing properly, received no wounds in the area which the protective clothing covered. The other person had the front of his flak jacket unzipped and received wounds in the unprotected area.

c. Recommendation: Personnel working with explosives or in the minefield clearing operations must wear their protective clothing, such as flak jacket and groin protectors, properly.

### 8. Safe Distances During Mine Clearing Operations

a. Observation: Personnel on mine sweep teams or clearing teams in minefields are not keeping safe distances between individuals.

b. Evaluation: Supervisory personnel of sweep teams or clearing teams should insure and instruct their personnel on the safe distances between individuals during sweep or clearing operations.

c. Recommendations: Safe distances outlined in FM 5-34 should be strictly adhered to during sweep and clearing of mines.

### C. Training:

#### 1. OJT Training Checklist

a. Observation: An individual assigned to On-the-Job Training of another individual to operate and maintain a piece of equipment, frequently passes over or forgets to instruct on items that are second nature to him. In addition, all jobs do not lend to using the piece of equipment in all its various functions.

b. Evaluation: A system had to be established to insure an individual, taking On-the-Job training, received all aspects of training on the particular piece of equipment.

c. Recommendation: A checklist should be made to list all the functions of the piece of equipment and all necessary maintenance features and given to the instructor to be filled out as the training progresses. The checklist will serve two purposes. First, it will insure that the individual being taught has received complete training. Second, the checklist can then be filed in the unit's training records as a record of cross training of personnel in the unit and a record for the OJT program of the unit.



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D. Intelligence: N/A

E. Logistics:

1. Property Accountability vs Supply Reports:

- a. Observation: According to AR 735-35, property accountability is required to be maintained according to USA number or serial number.
- b. Evaluation: It has been customary to account for property by USA number. However, many supply reports have been changed to include information by serial number only or by both serial number and USA number.
- c. Recommendation: Property Book Officers should account for property, both in the Property Book and on Hand Receipts by both USA number and serial number.

2. Utilization of Material Handling Equipment:

- a. Observation: Separate Combat Engineer Units are normally authorized very little Material Handling Equipment by TOE.
- b. Evaluation: During normal engineer operations, such as St Barbara and Liberty Canyon, it has been found that even combat engineer units are required to handle extremely large volumes of materials, especially lumber which cannot be handled efficiently with any other equipment other than Material Handling Equipment. This unit's two forklifts were constantly in use during the two operations mentioned.
- c. Recommendation: A method to adjust Material Handling Equipment in Combat Engineer Units is through TDA's.

F. Organization: None

G. Maintenance:

1. Westinghouse Grader.

- a. Observation: The guard for the lean wheel control shaft has been found to be too short.
- b. Evaluation: When the circle link lifting arm reaches its maximum height the guard stops it from bending the lean wheel shaft. Since the guard is too short it must be extended to prevent damage to the shaft.
- c. Recommendation: Weld one or two beads on top of the guard, thus extending it to the desired length and preventing shaft damage.

2. Inner Lug Nuts.

- a. Observation: The inner lug nuts on vehicles with dual rear wheels become loose after long hauls on rough roads.
- b. Evaluation: The lug nuts are not being tightened frequently enough resulting in shearing of the studs.



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SUBJECT: Operational Report--Lessons Learned (MCS-CSFORL-65) for the Quarterly

c. Recommendation: Inner lugs should be tightened weekly and especially after and before long hauls.

### 3. Joy and Day 250 cfm air compressor

a. Observation: Operators are not properly maintaining the fuel filters resulting in turning up ejection pumps.

b. Evaluation: A scheduled time for cleaning the fuel filters must be given to the operators.

c. Recommendation: Operators should drain fuel filters daily.

### 4. Priming the fuel pump on 10 Ton Tractors

a. Observation: If an operator allows a 10 ton tractor to run out of fuel it is a time-consuming task to bleed the fuel lines and prime the fuel pump.

b. Evaluation: A more expeditious means was needed for combat operations.

c. Recommendation: By pressurizing the fuel tank, fuel will be forced through the system allowing the vehicle to start in a minimum amount of time.

## H. Chaplain

### 1. Improving Religious Service Attendance

a. The chaplain held religious services at various unit mess halls on a rotating basis. Attendance fluctuates and is composed mostly of the men from the host unit for that day.

b. Evaluation: A method was needed to encourage regular attendance of more people every week instead of only when services are in the man's unit area.

c. Recommendation: Services were held in the battalion theater area located directly behind the Battalion Headquarters and away from the noise and distraction of roads. Chapel attendance increased sharply due to the centralized location.

## I. Signal

### 1. AN/GRA 50

a. Observation: When using an AN/GRA 50 center-fed doublet antenna, there has been trouble getting results with some antennae on frequencies over 20 megacycles.

b. Evaluation: The AN/GRA 50 center-fed doublet antenna has a frequency range of 1.5 megacycles to 20.0 megacycles. The formula for cutting doublet antennae does not comply to frequencies over 20.0 megacycles with the AN/GRA 50 antenna.

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c. Recommendation: If the distance between the two stations is less than fifty miles, a 15 foot whip antenna will work just as well as a doublet. If the distance is over fifty miles, obtain another type doublet antenna.

### 2. R/T 524 Transmitter

a. Observation: The R/T 524 on the AN/VRC 46 and 47 radios is not transmitting in this climate to its maximum range.

b. Evaluation: Regardless of the terrain and elements, the mistake is often made of leaving the power switch on "low" while driving around base camp or an area of less than three miles from other stations, then moving further away and forgetting to switch the power switch to "high".

c. Recommendation: To avoid any trouble at all regardless of distances, while traveling in Vietnam leave the power switch on "high" at all times.

J. Medical: None

K. Administrative: None

L. Safety:

### 1. Emersion Heaters

a. Observation: Smoke stacks on emersion heaters used for heating hot water for showers are seldom cleaned.

b. Evaluation: Emersion heaters heavily and constantly used 24 hours a day collect soot particles rapidly on the walls of the stack eventually closing off the opening to a point where the heater is damaged.

c. Recommendation: Smoke stacks of emersion heaters in continuous usage should be cleaned at least once weekly.

4 Incl

\* 1. Incl 1: ~~Project Completion Report~~  
~~(OSMN 588-10)~~

\* 2. Incl 2: ~~After Action Report~~  
~~(OSMN 588-12)~~

3. Incl 3: Organizational Chart

4. Incl 4: Project Listing

\* Incl 1 - 2 wd Hq DA, not published

*John C. Levanger*  
JOHN C. LEVANGER  
LTC, CE  
Commanding

EGE-CO (10 Nov 68) 1st Ind

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for the  
Quarterly Period Ending 31 October 1968

DA, HEADQUARTERS, 79TH ENGINEER GROUP, APO 96491, 20 November 1968

TO: Commanding Officer, 20th Engineer Brigade, ATTN: AVBI-OS, APO 96491

1. The operational report of the 588th Engineer Battalion (Combat) for the period ending 31 October 1968 has been reviewed and additional comments are as follows:

a. Reference Section II, paragraph E1: Non-concur. Since this information is recorded on DA Form 2408-7, a duplication of effort would be involved. Reports requiring both sets of numbers can be coordinated adequately between the Property Book Officer and Maintenance Officer.

b. Reference Section II, paragraph E2: Non-concur. Additional material handling equipment is available within the 79th Engineer Group's assets and can be issued on a temporary loan basis as required.

c. Reference Section II, paragraph G1: A study is in progress to determine if other battalions of the group are experiencing the same problem. Based upon this study, an Equipment Improvement Report (DA Form 2704) will be forwarded, if applicable.

d. Reference Section II, paragraph G4: Non-concur. This practice is a possible safety hazard and the battalion has been instructed not to prime the fuel pump in this manner. An alternate solution is to dampen a clean cloth with diesel fuel and place it over the breacher.

2. This report is considered to be an accurate summary of the battalion's operational experience.



RICHARD L. WEST  
Colonel, CE  
Commanding

AVBI-08 (10 Nov 68) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, RCS CSFOR - 65(R1) for  
Quarterly Period Ending 31 October 1968

DA, HEADQUARTERS, 20th Engineering Brigade, APO 96491 11 DEC 1968

TO: Commanding General, United States Army Vietnam,  
ATTN: AVHEN-MO, APO 96375

1. Submitted in accordance with USARV Regulation 525-15, dated 13 April 1968.
2. Subject report for the 588th Engineer Battalion (combat) has been reviewed and is considered adequate.

FOR THE COMMANDER:

  
RICHARD E. TAYLOR  
1LT, AGC  
Assistant Adjutant

AVHGC-DST (10 Nov 68) 3d Ind

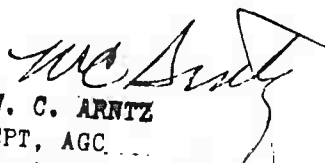
SUBJECT: Operational Report-Lessons Learned, RCS CSFOR-65(R1) for  
Quarterly Period Ending 31 October 1968

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 963751 4 JAN 1969

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,  
APO 96558

This headquarters has reviewed the Operational Report-Lessons Learned  
for the quarterly period ending 31 October 1968 from Headquarters,  
588th Engineer Battalion and concurs with the report as modified by  
the 1st Indorsement.

FOR THE COMMANDER:

  
W. C. ARNTZ  
CPT, AGC  
Assistant Adjutant General

Cy furn:  
HQ 20th Engr Bde  
HQ 588th Engr Bn

GPOP-DT (10 Nov 68) 4th Ind

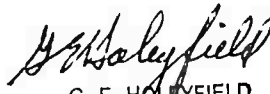
SUBJECT: Operational Report of HQ, 588th Engr Bn (Cbt) for Period  
Ending 31 October 1968, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 29 JAN 1969

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

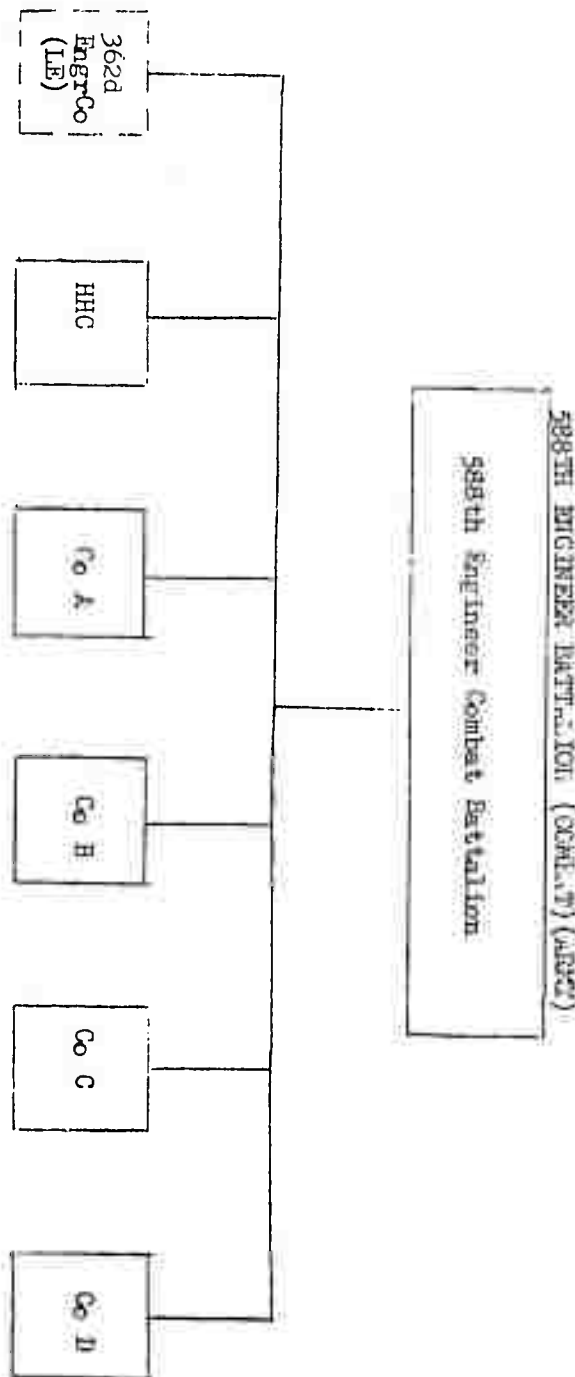
This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

  
G. E. HOLYFIELD  
MAJ. AGC  
Asst AG

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Inclosure 3 (Organization) to ORLL, HQ 588th Engr Bn, dated 10 November 1968



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Inclosure #4 (588th Engineer Battalion Current Directed Projects) -  
to OJLL, HQ 588th Engr Bn, dated 10 August 1968.

### 588TH ENGINEER BATTALION CURRENT DIRECTED PROJECTS

1. Aircraft Facilities, Tay Ninh, OSMN 588-16
2. Artillery Gun Pad Revetments, Dau Tieng, OSMN 588-19
3. Artillery Gun Pad Stabilization, FSB Luell, OSMN 588-17
4. Artillery Positions, Tay Ninh, OSMN 588-15
5. Artillery Positions, Dau Tieng, OSMN 588-13
6. Aviation Cantonment Facilities, Tay Ninh, CD 75-212-01
7. Aviation Support Facilities, Tay Ninh, CD 75-205-03-T-6S
8. Bunker Construction, Dau Tieng, OSMN 588-14
9. Bunker Construction, Tay Ninh, OS-079-68-124
10. Enlargement of FSB, CSD 68-79-10
11. Fire Support Base St Barbara, OSMN 588-11
12. Flight Control Tower, Tay Ninh, CD 75-21-03-T-6S
13. Helicopter Rearmament Point, Tay Ninh, OSMN 588-18
14. Laterite Pit, Dau Tieng, CD 67-43-79
15. Laterite Pit, Tay Ninh, CD 67-42-79
16. Nui Ba Den Construction, OSMN 588-8
17. Material Support for PHILCAGV, QL22, CD 98-215-LOC
18. Minor Construction, 79th Gp, CD 98-212-79
19. MUST Hospital, Tay Ninh, CD 66-212DC-79
20. Radar Tower, Dau Tieng, OSMN 588-20
21. Rock Quarry, Nui Ba Den, OSMN 588-10
22. Popular Forces Training Center, Tay Ninh, CD 75-214-01
23. Water Well Fill Points, Dau Tieng, CD 12-299-01-T-7S

Incl #4

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Inclosure #4 (588th Engineer Battalion Current Directed Projects) to ORLL  
HQ 588th Engr Bn, dated 10 August 1968.

### 588TH ENGINEER BATTALION CURRENT DIRECTED PROJECTS

24. Water Well Fill Points, Tay Ninh, CD 12-203-01-T-7S
25. III CTZ MACV Province Advisors, Tay Ninh City, Tay Ninh, CD 75-215-01
26. III CTZ MACV District Advisors, Tay Ninh Province, CD 75-216-01
27. 4002 Men Cantonment, Tay Ninh, CD 66-171DC-79
28. 4500 Men Cantonment, Dau Tieng, CD 12-203-01-T-6S
29. Routes 4, 13, 22, 26, 239 and 243, CD 98-201-15-T-M.

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